



UNIVERSITY OF GEORGIA
EXTENSION

Cannabis and Hemp Waste and Recycling -

Timothy Coolong, PhD

University of Georgia, Department of Horticulture

How I became involved in hemp

- Professor of Horticulture with a focus on vegetable production
 - Primary Extension appointment with research
 - Conduct applied field-based research for Georgia Growers
- Was asked to lead with hemp research in late 2018
- Research has focused on field production, postharvest treatment, and potential for heavy metal uptake
 - Noelle Joy & Amanda Marabesi – PhD candidates working on hemp

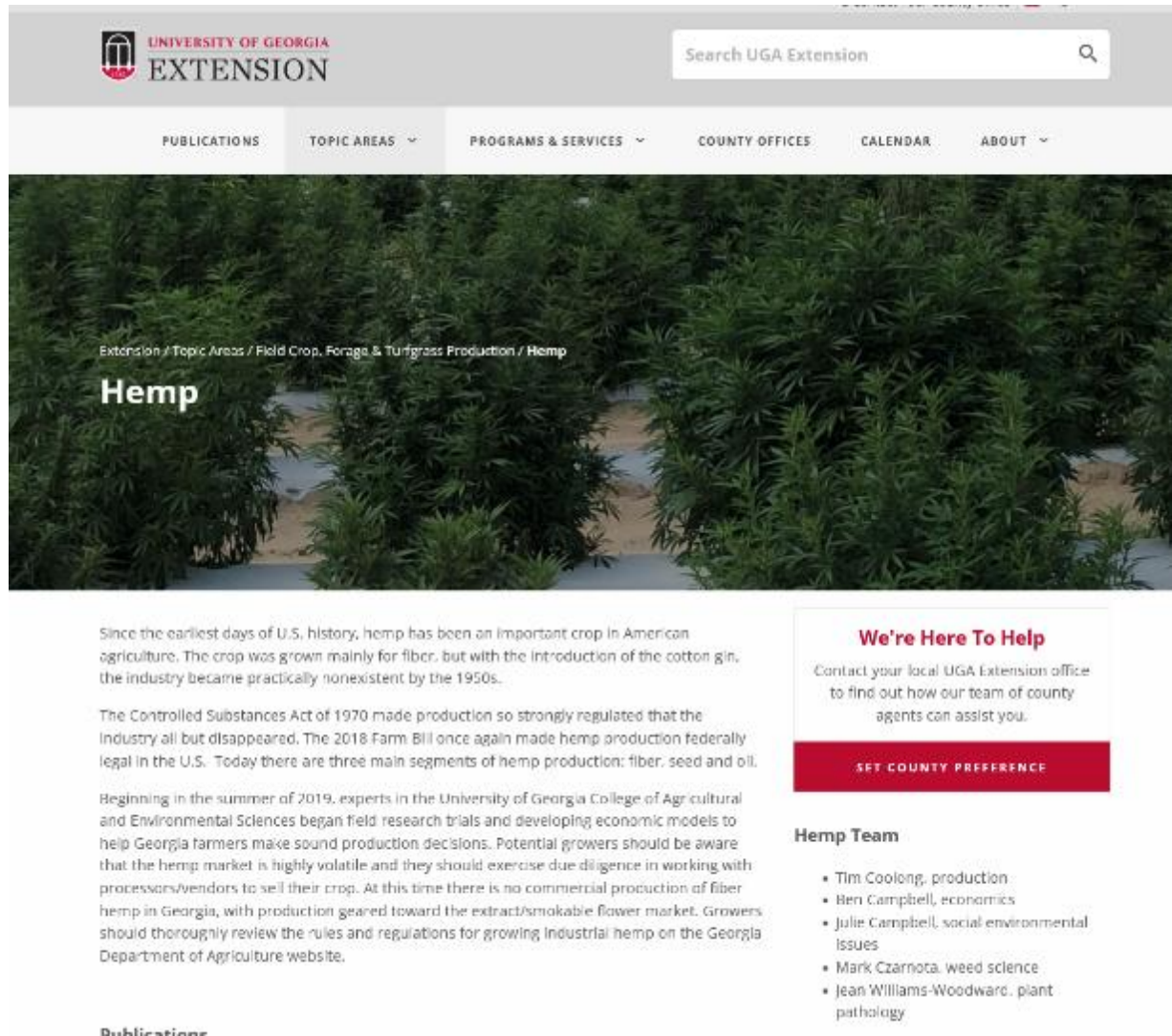


UGA Hemp Program

- UGA CAES only works with hemp at this time
 - Hemp has a total THC concentration of 0.3%
- We are not working with medical marijuana due to the current federal prohibition
 - In states where marijuana is legal (either medical or recreational) there is variability on whether the state land grant universities conduct research on production

UGA Hemp Resources

- Hemp team
 - Timothy Coolong (production)
 - Ben Campbell (economics)
 - Julie Campbell (social issues)
 - Mark Czarnota (weed science)
 - Jean Williams-Woodward (plant pathology)



The screenshot shows the UGA Extension website. At the top is the UGA Extension logo and a search bar. Below the logo is a navigation menu with links: PUBLICATIONS, TOPIC AREAS, PROGRAMS & SERVICES, COUNTY OFFICES, CALENDAR, and ABOUT. The main content area features a large image of hemp plants with the title "Hemp" overlaid. Below the image, there is a breadcrumb trail: "Extension / Topic Areas / Field Crop, Forage & Turfgrass Production / Hemp". The text below the image discusses the history of hemp in the U.S., its regulation, and the current state of production in Georgia. On the right side, there is a sidebar with a "We're Here To Help" section, a "SET COUNTY PREFERENCE" button, and a "Hemp Team" section listing the team members and their roles.

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Search UGA Extension

PUBLICATIONS TOPIC AREAS PROGRAMS & SERVICES COUNTY OFFICES CALENDAR ABOUT

Extension / Topic Areas / Field Crop, Forage & Turfgrass Production / Hemp

Hemp

Since the earliest days of U.S. history, hemp has been an important crop in American agriculture. The crop was grown mainly for fiber, but with the introduction of the cotton gin, the industry became practically nonexistent by the 1950s.

The Controlled Substances Act of 1970 made production so strongly regulated that the industry all but disappeared. The 2018 Farm Bill once again made hemp production federally legal in the U.S. Today there are three main segments of hemp production: fiber, seed and oil.

Beginning in the summer of 2019, experts in the University of Georgia College of Agricultural and Environmental Sciences began field research trials and developing economic models to help Georgia farmers make sound production decisions. Potential growers should be aware that the hemp market is highly volatile and they should exercise due diligence in working with processors/vendors to sell their crop. At this time there is no commercial production of fiber hemp in Georgia, with production geared toward the extract/smokable flower market. Growers should thoroughly review the rules and regulations for growing industrial hemp on the Georgia Department of Agriculture website.

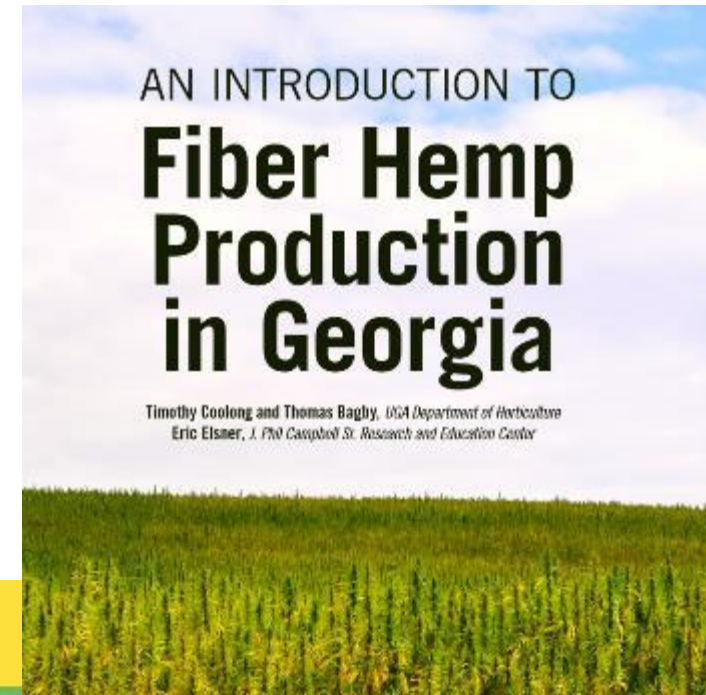
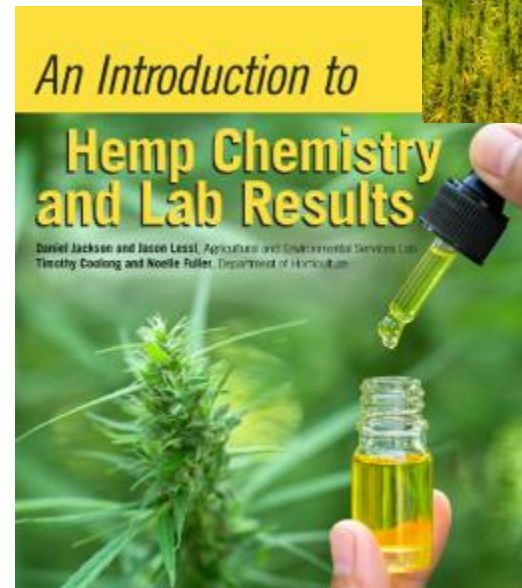
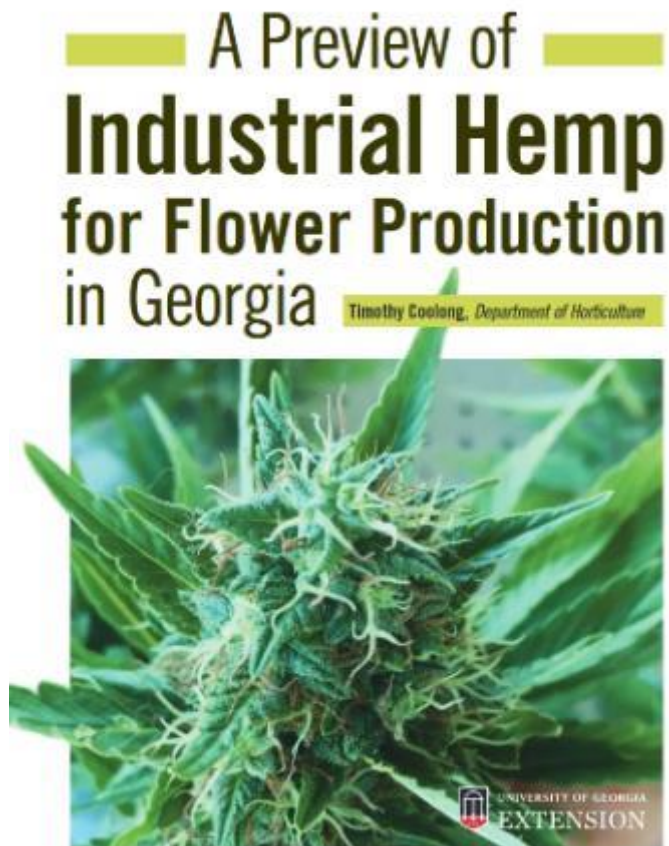
We're Here To Help
Contact your local UGA Extension office to find out how our team of county agents can assist you.

SET COUNTY PREFERENCE

Hemp Team

- Tim Coolong, production
- Ben Campbell, economics
- Julie Campbell, social environmental issues
- Mark Czarnota, weed science
- Jean Williams-Woodward, plant pathology

UGA Hemp Resources



UGA Hemp Research

- The majority of hemp research has focused on growing hemp for the flower market (cannabinoid extraction)
 - This is the major market for Georgia farmers



UGA Hemp Research

- Starting in 2019 we have conducted roughly 20 research projects
- This includes Variety trials conducted in 2019 and 2020 in Watkinsville, Blairsville, and Tifton



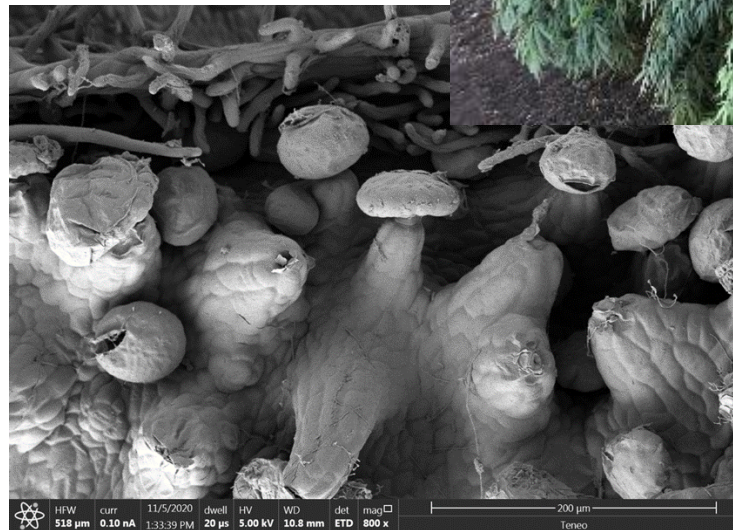
UGA Hemp Research

- Production oriented work including Nitrogen fertility w/ FVSU, fumigation, planting dates, plasticulture vs. bareground production, and herbicide work (Drs. Stanley Culpepper and Hannah Wright)



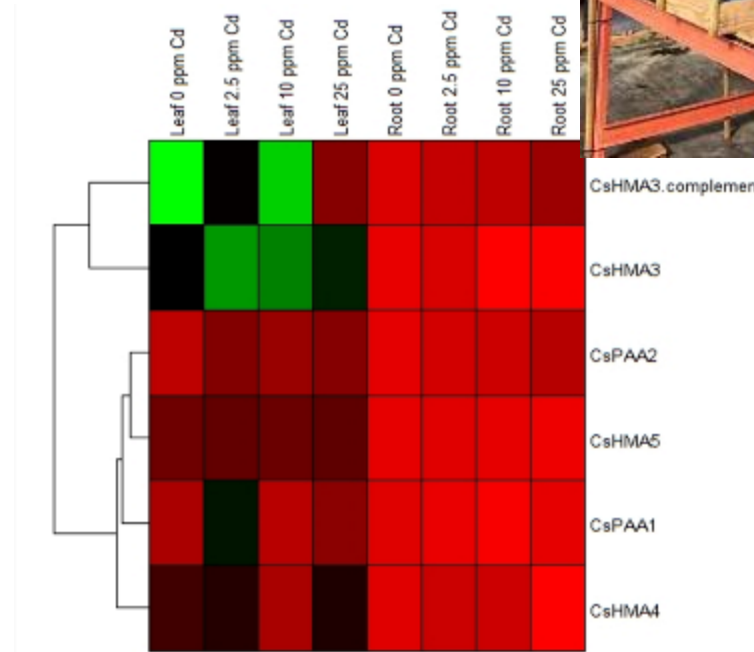
UGA Hemp Research

- Harvest and postharvest management of hemp – Noelle Joy (PhD candidate)
 - Specifically how does curing/drying impact cannabinoids and terpene compounds in hemp flower



UGA Hemp Research

- Cadmium uptake in hemp grown for the flower market – Amanda Marabesi (PhD candidate)
 - Hemp has shown some potential for phytoremediation, this may not be ideal for hemp grown for consumption -



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UGA Hemp Research

- Fiber hemp production
 - We have conducted limited research with growing fiber hemp in Georgia
 - There are *many* questions that need to be answered, but without a commercial outlet work has ceased.



Hemp Waste & UGA

- Currently the primary waste is hemp stalks
 - Not well suited for hemp textiles
 - Core vs. Bast fibers
 - Could be used in other products
 - Using biomass would be challenging due to small acreage that is spread out



Hemp Waste

- Biomass waste (flower and some leaf material) is limited
 - It is “post-processing” in many instances
 - Processor is usually managing the waste
- All UGA hemp waste is burned or composted to render it unrecognizable/non usable



Outreach and the Hemp Market

- Conducted more than 3 dozen county-regional meetings starting in 2019
- Multiple agent trainings
- Outreach efforts have changed as the market potential has changed
- Growers nationally overproduced in 2019
 - Prices dropped dramatically in 2019 & 2020
 - Many startups went bankrupt
 - Interest in supporting research from industry has been reduced
- Currently most growers are smaller scale

UGA Hemp Research Moving Forward

- Field production research has been paused due to lack of resources
 - 2021 was the last field year
- Students are finishing projects/publishing
- Production research likely will not resume without additional resources
- Fiber hemp offers many potential new research opportunities



Q&A

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